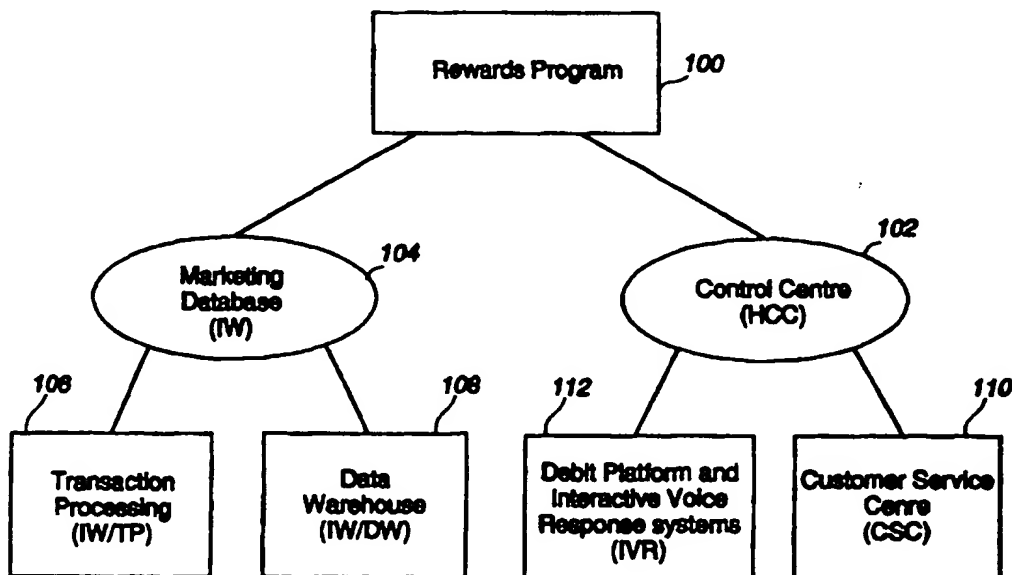**PCT**

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(54) Title: TELECOMMUNICATIONS REWARD METHOD

(57) Abstract

A telecommunications reward method provides telecommunications services rewards for purchases made by members. The reward method frequently updates the member's reward profiles so that rewards are virtually instantaneous. The rewards consist of telecommunications services, for example long-distance call minutes or cellular telephone air time, and are easily redeemed. Apparatus for implementing the method includes a high-level control centre and a database management system.

TELECOMMUNICATIONS REWARD METHOD

Field Of The Invention

The present invention relates to telecommunications reward methods and is particularly concerned with the rewards based on consumer purchases.

Background Of The Invention

The use of loyalty rewards programs to retain existing customers and to entice new ones to purchase or use a particular product has become persuasive amongst retailers from grocery chains to petroleum companies and also amongst credit card companies who provide a reward of some sort or another for using their card rather than a different credit card. One of the problems with these reward programs whether it is air miles for gasoline purchases or credits toward an automobile purchase for using a particular credit card, is that they do not provide something which has immediate value to the participant in the rewards program.

Summary Of The Invention

An object of the present invention is to provide an improved telecommunications reward method.

In accordance with an aspect of the present invention there is provided a method of providing telecommunications rewards to a member comprising the steps of generating a point-of-sale transaction, relating the point-of-sale transaction to a member of telecommunications awards, determining value of reward in dependence upon the point-of-sale transaction, updating a member's profile for the member by the value determined.

Accordingly the method of the present invention combines known

technologies in such a way as to create a system whereby participants in a rewards program can be given telecommunications access time, e.g. long distance time, Internet access time or cellular telephone air time, in return for purchases and the reward would be credited and available for use immediately following the purchases.

The method relates a purchase to an immediate reward for telecommunications access time by identifying the purchase as eligible for a reward through a member database for example a UPC code scanner database or a credit card magnetic strip database which then communicates to a telecommunications debit platform which in turn is interfaced with a long distance or cellular provider.

Advantages of the present invention are as follows:

●   Providing a link to purchases with instant gratification of telecommunications credits, for example in telephony long distance or cellular minutes and in data communications access time to services or the Internet.

●   There is thus no need to save up or receive a statement prior to using the credit, a participant in the rewards program would be able to utilize the reward immediately following the purchase for which the reward was granted.

Brief Description Of Drawings

The present invention will be further understood from the following description with references to the drawings in which:

Figure 1 illustrates, in a flow chart, an overview of the reward method in accordance with an embodiment of the present invention for a magnetic strip card user;

Figure 2 illustrates, in a flow chart, an overview of the reward method, in accordance with an embodiment of the present invention an overview of the method for a UPC code card holder;

Figure 3 illustrates, in a flow chart, the reward method in

accordance with the embodiment of the present invention;

Figure 4 illustrates in a block diagram apparatus used by the method of Figure 3;

Figure 5 illustrates, in a flow chart, an overview processing data flow for the reward method of Fig. 3;

Figure 6 illustrates, in a block diagram, input activities of the method of Fig. 3;

Figure 7 illustrates, in a block diagram, reward transfers;

Figure 8 illustrates, in a flow chart, the file processing data flow for the reward method of Fig. 3;

Figure 9 illustrates, in a flow chart, member lead processing data flow for the reward method of Fig. 3;

Figure 10 illustrates, in a flow chart, member enrollment processing data flow for the reward method of Fig. 3;

Figure 11 illustrates, in a flow chart, the reward transaction process for the reward method of Fig. 3;

Figure 12 illustrates, in a flow chart, transaction processing data flow for the reward method of Fig. 3;

Figure 13 illustrates in a block diagram outbound activities for apparatus used by the method of Figure 3; and

Figure 14 illustrates, in a flow chart, statement processing data flow for the reward method of Fig. 3.

Referring to Figure 1 there is illustrated in a flow chart an overview of the method in accordance with an embodiment of the present invention.

At step 1, as represented by a card 10, a point-of-sale transaction is initiated.

Step 2, a member card is swiped through a magnetic strip reader, as represented by a block 12, as in a typical point-of-sale transaction.

Step 3, a credit card (or debit) card database is accessed, as

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represented by a block 14, to confirm the transaction. Thus far the method proceeds as is well known with point-of-sale transactions.

Step 4, a field in the card holder record, in the database 14, identifies the card holder as a member of the reward plan. Responsive to the presence of this identification a datalink is established, as represented by block 16, to an appropriate debit platform, steps 5a and 5b, as represented by blocks 18 and 20. For simplicity, only long distance 18 and cellular 20 debit platforms are illustrated. However, the actual debit platform used could be a telecommunications services platform. The telecommunications services platform could credit the member with long distance or cellular time or a host of other services, such as Internet access time, voice messaging, call waiting, and calling number identification. Individual member profiles could be used to distribute rewards between the various services or to other users. For example to a daughter away at University.

The rewards method is completed by step 6, by the member using the telecommunications reward, as represented by block 2.

Similarly Figure 2 illustrates an overview of the method for a member having a UPC type card at step 1, as represented by a UPC card 24.

At step 2, a member's card is held to a UPC code scanner, as represented by block 26, as is typical in a point-of-sale UPC transaction.

At step 3, a UPC code card database is accessed, as represented by a block 28 to confirm the transaction.

At step 4, a field in the current holder record in the database 28 identifies the cardholder as a member of the award plan. Responsive to the presence of this identification a data link is established as represented by block 16. The remaining steps in the method are the same as in Figure 1.

Referring to Figure 3 there is illustrated in a flow chart a reward method in accordance with another embodiment of the present

invention.

The method begins at step 1 with a point-of-sale transaction being collected, as represented by block 30. Step 2, transactions are aggregated and sorted as represented by block 32. An associated transaction file, as represented by block 34 is created by the first and second steps. At step 3, transactions are rated to determine number of seconds to be rewarded, as represented by a block 36. In order to accomplish this rating, a rewards rating table, as represented by block 38, is consulted. At step 4, any special treatment required for members is determined and rewards are calculated. Special treatment is determined by consulting a member profile, as represented by block 42, and a rewards file is created as a result of step 4, as represented by block 44. At step 5, the member's profile is examined and rewards are updated on the member file, as represented by block 46. The updated member profile is represented by a block 48. At step 6, a master update process is performed on a debit platform as represented by block 50. A debit system member profile is updated as represented by block 52. The method is completed at step 7, when a member phones into the system and consumes rewarded time as represented by a block 54.

Referring to Fig. 4, there is illustrated a reward system 100 comprising a high-level control centre (HCC) 102 and an information works (IW) 104. The IW 104 includes a transaction processor (IW/TP) 106 for partner management, member management, and reward system calculations and an data warehouse (IW/DW) 108. The HCC 102 includes a Customer Service Centre (CSC) system 110 and a debit platform with interactive voice response (IVR) 112.

The method is a database-driven relationship marketing program, there are four distinct business components.

Transaction Processing (IW/TP) Database Management System 106; Data Warehouse (IW/DW) Database Management System 108; High-level Control Centre for Debit Platform 102; and IVR systems (IVR)

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112.

Now to address the system functionality as well as describe the inter-relationship of the Customer Service Centre, Debit Platform and IVR components with InfoWorks' components: Transaction Processing

5   and Data Warehouse Database Management Systems.

Referring to Figure 5, there is illustrated, in a flow chart, an overview processing data flow for the reward method of Fig. 3. Advantages of the present system are:

I.   * Immediate gratification with "real-time" reward accumulation and

10   redemption.

* Conceptually unique, technology-based coalition loyalty program.

* High appeal, easily attainable reward currency.

* Preemptive opportunity to link land-based long distance with cellular mobility.

15   * Debit Platform offers enhanced customer telecommunications services.

* Opportunity for value-added credit card overlay with innovative functional enhancements.

* Commitment to data driven Customer Value Enhancement strategies for partners.

20   * Network time, Debit Platform, and marketing databases supported by blue chip providers.

* Longer term opportunity exists for Members and Partners to ride the information highway into direct-to-home entertainment/information) ser

* Global expansion opportunities with significant ROI.

Overview of Reward Process

*Members in the program earn their points

automatically through electronic Point of Sale (POS) tracking when they shop at participating Partner.

5   The IW/TP System collects and processes the Member purchase transactions and assigns the appropriate reward points.

The reward redemption process includes calling the IVR system via a 1-800 telephone number, 24 hours a day, 7 days a week: Members will call a 1-800 number, Enter their unique Member Number and password, Place a call with

10   a telephone number of their choice

The HCC/Debit Platform is the data manager of the redemption process and is the vehicle that Members use to redeem their reward points.

HCC/IVR platform is a voice-assisted telephony system. The IVR system is a vehicle for: Customer Service, Program Information, Member Enrollment,

15   Customized advertising, Branded messaging, Branded marketing surveys.

For service, Members may access a live operator at the CSC (Customer Service Centre).

Database Management Systems

Data Warehouse and Transaction Processing Database Management Systems

20   allow for an extremely flexible environment supporting several basic, but different business functions. Together, they support:

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- Integration with a first class customer service system

- High volume transaction processing

- Detailed management reporting and EIS systems

- Partner reporting

- Basic analytics and the IW Customer Value Scorecard™

- Marketing information retrieval and advanced analytics

Objectives of the Database Management Systems

- Design and support a system that is driven by the anticipated marketing information requirements, with the flexibility to adapt to changing market dynamics.
- Ensure seamless connectivity between the Database Systems, Customer Service Centre, Debit Platform, IVR and external suppliers and vendors.
- Ensure data integrity by developing appropriate edits, controls, audits and procedures.
- Meet the growth requirements of the program in terms of membership, partnership, and more detailed transactional data, i.e. product categories or SKU.
- Ensure the system architecture has the necessary through-put and offers flexibility, scalability and portability to manipulate and report information in the database.
- Continuously enrich the Member Profile information though survey data, file overlays and tracking of response data.

• Deliver dynamic analytic services to support Customer Value
Enhancement (CVE)   marketing strategies.

The development of the functional design, system specifications,
programming, simulation, training and implementation of the
5   system will take place as two deliverables.

IW/TP System Architecture-Pipeline and parallel processing

The architecture of the IW/TP engine will include many asynchronous
processes to handle different stages of transaction processing. The processes
will be similar for each transaction type; they will be kept simple; and they
10   will support pipeline and parallel processing. This architecture allows many
processes to be reused for different transaction types. Communication
processes can be common to many transaction types and for many parties.
Separate processes to handle the communication links, to load transaction files
into the database; and to process the transactions within the database will
15   simplify the maintenance of the programs. Simple changes to file formats and
support for new communication methods could be implemented without
touching the transaction processing processes. The migration from a batch
engine to a real-time engine could be done quickly by providing a new loader
process on top of the existing processing processes.

20   Inbound Processes

The processes (or software modules) for an Inbound transaction will be:
* File reception (from communication line or media),
* Basic file validation (number of trans.; transaction formats),
* File segmentation (broken into "work" units),
25   * Segment loading (in a work area),
* Segment validation and computations (still in a work area).

- Detect and log validation errors

- Compute any necessary quantity (Rewards, Offers)

* Segment insertion (into final database)

30   Referring to Figure 5, there is illustrated, in a flow chart, processing data

flow for the system. And in Figure 6, there is illustrated, in a block diagram, input activities of the system.

Outbound processes

The processes (or software modules) for an outbound transaction will be:

5   * Create outbound transactions (select a set for transmission).

* Create outbound file (for outbound transactions)

* File transmission (to communication line or media)

Transaction Types and Input Activities

* Member Lead (prospect data)

10   * Member Enrollment (basic Member data)

* Member Profile changes (demographics)

* Member Purchases (POS transactions sent by Partners to IW/TP)

* Reward Credits (Member Base Offer and Special Offer

15   points)

* Reward Debits (Debit Platform redemption of points ad call detail data)

* Reward transfers

* Member IVR Message control (what messages to play)

20   * Member IVR Response (responses to branded messages and surveys)

* Customer Service Messages (problems and resolutions about Members)

* Fulfillment Request message (control for Member

25   fulfillment)

* Mail-Out Message Flags (Fulfillment)

* Database Synchronization (shared table additions/updates)

* Transaction Acknowledgment (processing audit

5   control).

Member Lead (ML)

A prospect may enroll into the reward system program using one of the various methods that are available:

- Customer Service Centre

10   - IVR

- Mail-in order form via Data Entry

- Internet *

- Electronic Kiosk *

- Partner "auto-enrollment" information

15   - Partner "auto-prospect" information

Regardless of which enrollment method is chosen, a new Member Lead transaction is generated and sent to IW/TP.

The transaction layout is the same as the Member Enrollment (ME), except the transaction identifier is "ML" and the Member Number must be blank. A

20   unique reference number is assigned to the transactions and stored in the MEMBER_LEAD table. CSC is responsible for returning a clean Member Enrollment (ME) transaction with the assigned reference number. This reference number will be used to update the MEMBER_LEAD table as accepted or rejected. If the lead is rejected, a reason code will be provided by

25   CSC.

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Member Enrollment (ME)

All Member Enrollment transactions will be stored for auditing purposes. The CSC is responsible for validating all information on prospective Members. The new Member information may be generated via the IVR system, or

5   Member Lead transactions sent from IW/TP. Once an individual's request for enrollment has passed validation, CSC will:

1. Assign a unique Member Number

2. Activate the Member Number on the Debit Platform

3. Send a Member Enrollment (ME) transaction to

10   IW/TP.

4. If the new Member Lead was provided by IW/TP, then the reference number must also be included on the ME transaction.

5. If a new Member Lead is rejected by the CSC, a

15   reason code will be sent to IW/TP for updating of the MEMBER_LEAD table.

Member Profile changes and updates

Member Enrollment is divided into two categories:

1. Basic profile which includes name, addresses, phone

20   numbers, etc.

2. Demographic profile which includes answers to various survey questions

a) Base

If any profile information changes on a given Member, all information (fields) will be transmitted from CSC to IW/TP using the Member Enrollment transaction. The following transaction type code will be used to control the update process.

➡ N - new Member enrolled

➡ U - update current Members profile

a) Demographic

For demographic profile updates, CSC will only transmit the information that has changed. A Member Enrollment type ME02 transaction will be used to provide this demographic information.

Member Purchase (MP)

When a Member purchases various items at a Partner's location and presents their reward system Membership card, the Partner is responsible for transmitting the purchase transaction to IW/TP using one of the certified transmission methods. This purchase transaction is translated into reward points and the Member's balance is updated. Each purchase transaction will generate a Reward Credit transaction. Multiple Reward Credit transactions will be sorted and grouped into blocks for transmission to HCC.

Reward Credit (RC)

A Reward is a reward system quantity of points purchased by a Partner or FTC for a Member. This Reward Credit transaction contains a description of a Member's purchase, date/time, Partner, location, transaction purchase

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amount and the Reward points. This transaction is typically sent by IW/TP to HCC and serves two functions:

1. CSC will receive Reward transaction details to assist them with Member inquiries.

5

2. Debit Platform is given the Reward Credits to increase a Member's point balance for potential redemption via long distance or cellular phone calls.

All reward credit transactions should have an offer code or other field to identify the source.

10 Reward Debit (RD)

Each time a Member calls into the Debit Platform and makes an outbound call, a Reward Debit transaction is generated. This redemption transaction will record:

- caller's start time

15

- caller's end time
- destination number (or description, i.e. movie title)
- total reward consumed and subtracted from the Debit Platform
- redemption currency code (i.e. cellular, long

20

distance, video)
- Call detail information

HCC will transmit all Reward Debit transactions to IW/TP. IW/TP will update the Member's monthly redemption accumulators, store and archive the transaction for analytical

25 reporting and statementing.

The Reward Debit transaction is defined so that other

- 15 -

redemption currencies are possible.

Reward Transfer

Any Member can transfer rewards from themselves to another Member. This transfer may be initiated by a Member within the IVR system. A transfer is simply a **Reward Debit** transaction for the initiating Member and a **Reward Credit** transaction for the receiving Member. Each transaction will be identified with both Member Numbers and the same reference number. If CSC representatives are allowed to transfer rewards on behalf of a Member, then security must be in place to ensure rewards are not transferred to common Member numbers (themselves, friends, etc.).

Referring to Figure 7 there is illustrated, in a block diagram, reward transfers.

Member IVR Message flags (IM)

This transaction controls the branded message switches for the IVR system. These flags instruct the IVR system to play specific targeted advertisement messages for individual Members. This transaction can be generated by an analytical process according to some business rules via the IW/DW system. The transaction will update the Member's message profile and is passed on to the Debit Platform for IVR processing.

Each message will have an effective date and expiry date. The IVR system is responsible for deactivating the message once it is played and returning an IVR Response transaction.

IVR Response (IR)

Whenever a Member calls into the IVR system and is prompted for various messages and/or surveys, an IVR response transaction will be sent to IW/TP for future analysis. Which message/survey generates these transaction will be the responsibility of reward system and HCC. The data stored would indicate how long they listened to a specific message (i.e. % completed, zero-out,

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hung-up), as well as the response codes from survey questions.

CSC Message (CM)

All calls made to the CSC by a Member will be recorded. The problems,
complaints, messages, and resolutions are categorized then sent to IW/TP for

5   insertion into the IW/DW database for future analysis.

Mail-Out Message Flags (MF)

Controls the Mail-Out messaging flags. These flags will instruct the statement
processing fulfillment house which messages, flyers, advertisement should be
included with the statement. These transactions are generated by IW. reward

10   system Account Managers are part of the process of defining requirements.

Database Synchronization (DS)Most database tables in the IW/TP system are
updated via transactions. However, not all tables require a specific
transaction type like Member Enrollment (ME) or Member Reward (MR).
The Database Synchronization (DS) transaction is the "catch-all" transaction

15   for all other database synchronization transactions.

Transaction Processing Acknowledgments (TA)

Processing acknowledgments transactions are generated by remote sites on
transactions sent by IW/TP to them. This mandatory information allows
IW/TP to track the transactions it generates. It ensures that a remote site

20   actually received and processed the transaction file sent by IW/TP.
Acknowledgments will be processed by IW/TP the same way as any other
inbound transaction. This will also greatly simplify the synchronization of
different systems.

Control Processing

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Referring to Figure 8 there is illustrated, in a flow chart, the file processing data flow for the reward method of Fig. 3.

File Reception

All files are transmitted via predetermined telecommunication interfaces. Each
5   party will be assigned an unique USERID which will allow them to transmit files in to their own directory. Transmitted files are automatically located and recorded in the IN_FILE_CONTROL table with a unique file control number as "RECEIVED". The files header information and date/time of reception is also recorded. The file will then be moved to a designated processing area for
10 validation.

High Level Validation

The IN_FILE_CONTROL table will be automatically scanned at regular
intervals for "RECEIVED" files. The file header is checked for validity:

- Transaction type using the system edit table

15
- Loyalty Program using the system edit table

- Partner ID using the Partner table

- Service centre using the system edit table

- File sequence number to ensure this file has not
  already been transmitted using the
20 IN_FILE_CONTROL table.

- Date and time

Each detail record is validated to ensure all number fields are numeric and
selected control fields are accumulated. All control fields are checked against
the trailer record. If any errors are found an error log and report will be
25 generated. These errors will be communicated to the sending party according
to a pre-defined procedure for that specific party. A successful validation will
update the file status to "VALID"

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Disaster Recovery Copy of input files

All files that will be scheduled for processing will be copied and sent to the off-site backup server. The backup server will hold a copy of all files received and transmitted to connecting parties. These files will be used for

5   recovery purposes in case of disaster or system failures. The backup server must have the capability to store a minimum of all files received and transmitted since the last full off-site system backup. Upon successful transmission, the IN_FILE_CONTROL disaster recovery field is updated to "SENT".

10   File Segmentation

File segmentation is the processing of breaking up files to be processed into smaller work units. These work units can be processed using parallel processing. This means multiple units of work can be process simultaneously. The IN_FILE_CONTROL table is scanned for files with a status of

15   "VALID". The selected file is then segmented into smaller work files. The size of a segment will depend on the transaction type and is controlled using the system EDIT_TABLE. Each segment is assigned a number and each transaction will be assigned a unique tracking ID. Once a segment is completed, the segment name, transaction type, and size is added to the

20   SEGMENT_CONTROL table with the status "LOADED".

Segment Validation and Preprocess

This process will scan the SEGMENT_CONTROL table for "LOADED" segments. Each time a loaded segment is encountered the status is changed to "PREPROCESS". The preprocessing of each transaction will consist of

25   validating member codes, location codes, message codes, etc. All preprocessing functions that require table lookups, calculating of rewards are performed and the results stored with the transactions. All transactions that have error conditions or marked for suspend are marked with an appropriate error message code and stored in the ERROR_CONTROL table.

When processing segment has been completed the segment status is changed to "PROCESSED".

Audit and Control

Up to this point the only production database tables being updated are the
IN_FILE_CONTROL and SEGMENT_CONTROL tables. All other tables are
work areas. If a system failure occurs any time after file reception, no
production data recovery is required. As part of the system startup
procedures:

- All work areas will be deleted

- All SEGMENT_CONTROL entries will be deleted
  that have not been "COMMITTED".

Segment Process and CommitEach segment marked "PROCESSED" is
located and any additional processing (if required) is completed. Additional
processing will be required only if the result of the processing is dependent on
the current status of a Member. An example would be if a Member's status
level changes based on the accumulated rewards for a given Partner. The
result changes the calculation of the reward on the next transaction for the
same Member. All transactions are inserted into the production database and
all updates are applied to the production databases. At the end of a segment
all updates are committed to the database and the SEGMENT_CONTROL
entry is changed to "COMMITTED". Once all the segments for a given input
file have been committed then the IN_FILE_CONTROL entry is changed to
"COMMITTED" along with the date and time, total number of transactions
processed, and the total number of errors.

Audit and Controls

All segments that require the updating of the same database tables will be
updated asynchronously, i.e. there will be no parallel processing of segments

- 20 -

that update the same tables.

Extract outbound transactions

Outbound extracts will be controlled by the SCHEDULE_CONTROL table.
This table will control the frequency, destination and size of all outbound
files. When a specific extract process is started, the system will:

    1. Creates the file.

    2. Extract all the un-flagged transaction records from a
       selected table

    3. Create the required header record

    4. Format the detail records

    5. Create the required trailer record

    6. Closes the file

    7. Mark as "flagged" the un-flagged transaction records
       from step 2

    8. Each extract file is assigned a unique name and an
       entry is added to the OUT_FILE_CONTROL table
       with the status set to "EXTRACTED".

Transmitting File

This process will scan the OUT_FILE_CONTROL table for all entries with a
status of "EXTRACTED". For each entry found, a telecommunication
connection is initiated to the designated party and the file is transmitted.

Disaster Recovery Copy of output files

A copy of the output file is also transmitted to the off-site backup server.
Upon successful transmission, the OUT_FILE_CONTROL disaster recovery
entry is updated to "SENT".

Transaction Acknowledgment

All transactions sent to a remote data centre for processing will require an acknowledgment that the transactions were successfully processed or failed. These acknowledgments will be returned in a standard format that conforms to the same header, trailer standards as other file formats. By using this format the acknowledgment files can be processed using the same standard dataflow as mentioned above.

Purpose of off-site Disaster Recovery Server (DRS)

Copy of all files received by IW/TP and Copy of all files transmitted by IW/TP. System back-ups will be performed weekly (frequency may change) and stored off-site. If a disaster occurs prior to the next scheduled IW/TP system back-up, the previous system back-up is retrieved from off-site storage. In addition, all the required input and output files are retrieved from the off-site Disaster Recovery Server. These input files will be re-processed using the last system backup. However, it is possible that the new rewards generated may not match the ones originally sent to HCC. These output files should not be transmitted to HCC until the new output files are validated. This requires a comparison of the new output files with the DRS copies of the originally transmitted output files. For each transaction that does not match, an error message and possibly an adjustment transaction should be generated.

Member Module

This is the main module of the system and it contains pertinent information about the Member, i.e. Member Number, name, address, language preference, etc. This module supplies information to many other supporting modules.

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Member Enrollment Management

A Partner's customer can become a reward system Member and added to the IW Transaction Processing database as follows:

5

1. Auto-Prospects - A Partner can supply a "target group" of valued customers which can be uploaded to the database as leads(prospects) via tape or electronic transfer.

   Note: They are not automatically enrolled.

2. Other methods:

   10
   • Enrollment forms sent by fax, e-mail, take-ones, or mail.

   • Enrollment data collected via a telephone call to Customer Service Centre

   • Enrollment data collected via the IVR systemValidation of Member data

15

Data for potential new Members can enter the system from a variety of sources, but in each case, HCC is responsible for validating all new Member data.

If IW/TP receives information from Data Entry or from Partners, IW/TP simply passes on this raw Member

20

Lead transaction to HCC for validation.

Referring to Figure 9 there is illustrated, in a flow chart, member lead processing data flow for the reward method of Fig. 3.

Referring to Figure 10 there is illustrated, in a flow chart, member enrollment processing data flow for the reward method of Fig. 3.

Rewards Module

Partners Rewards- Partners are responsible for capturing the reward system data and sending it to FTC. Members (using the reward system card) will earn points for each dollar spent at a Partner's location. Members will have options on "what" currency types they wish to use when redeeming their points, i.e. Long Distance minutes, Cellular minutes, etc.

Data Capture

There are several methods in which a reward system transaction can be captured and sent to the Partner Host. The methods are as follows:

* POS Direct - data is captured via card swipe at the Partner POS.

* F.I Terminal - data is captured on a Financial Institution Terminal (Credit/Debit).

* reward system Terminal - data is captured on a standalone reward system terminal.

* Record of Charge - data is captured on chits/paper.

* PC Direct - data is entered and captured on a PC.

Reward Credit Transaction Process

Once the transaction is received at the Partner Host, the following process is executed:

The Partner then generates a Member Purchase (MP) transaction and sends it to the IW/TP. Procedures and Standards for Data Capture will be provided by FTC to the Partner.

IW/TP receives and validates the MP transaction by Member Number, Partner ID, Partner's store location ID, offer codes. Any errors are flagged and reported to the Partner.

Reward points are likely to be pre-calculated by the Partner. However, IW/TP must verify the points in any case. Using the Offer rate table, the reward points are calculated.

The reward points are analyzed for fraud by comparing the points to pre-defined Partner thresholds. Any suspected transactions are flagged as "suspense" and FTC is notified for manual verification.

IW/TP generates a Member Reward Credit (RC) transactions. IW/TP will also manage Member and Partner point accumulator buckets.

The RC transactions are transmitted to HCC. The RC transactions are stored HCC receives the RC transactions and updates the available points for the Member on the Debit Platform

The CSC will receive the Reward Credit Transactions via HCC from IW.

Reward Transaction Triggers

All of these triggers represent a Reward Credit transaction type. Each has its own set of business rules:

Members purchase at a Partner's store

Purchase of a specific item (bonus offer)Purchase of a specific offer of double or triple the BASE

Accumulation of points over a pre-defined time period

Transfer from one Member Number to another Member Number (account)

Discretionary award from Customer Service Representative

IVR rewards for completing surveys

Promotional reward of units

Reward Redemption

HCC is responsible for managing the Debit Process. This debit process, commonly known as redemption is initiated when a Member consumes or uses a part of their reward points. IW manages the Member purchases to reward "points" conversion process. HCC manages the reward point to "currency" conversion process based on the method of redemption, i.e. Long distance, cellular, video, Internet.

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Reward Debit Transaction Process

When the Member redeems his/her points, HCC debits their point balance
based on the type of currency used to redeem the points, i.e. 1 cellular minute
= 2000 points. A Reward Debit transaction is generated and transmitted to
5   IW/TP to keep the systems synchronized.

Reward Credit Processing

Rules and standards apply for Credit processing. The rules and standards
must be authorized by reward system and will vary depending upon the
Partner. IW and the CSC can generate credits for a Member (upon
10   investigation). If IW initiates the credit, a Member Reward Credit
transaction is created and transmitted to HCC. If the CSC initiates the credit,
a Member Reward Credit transaction is created and transmitted to IW. The
Member's account will be credited instantly, allowing immediate redemption.
Referring to Figure 11 there is illustrated, in a flow chart, the reward
15   transaction process for the reward method of Fig. 3. Referring to Figure 12
illustrates, in a flow chart, transaction processing data flow for the reward
method of Fig. 3.

DATA WAREHOUSE

Analytical Processing will render the mass of Transaction, IVR and Customer
20   Service data intelligible and actionable to these reward system stakeholders:

- Partner Marketing Team

- reward system Account Managers

- reward system Program Management

- InfoWorks System Administrator

25   On-Line Analytical Processing (OLAP) is a system for storing, analyzing,
reporting and viewing information about the activity of reward system

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Members. OLAP is distinguished from the TP (Transaction Processor) in these ways:

Storage- Transactions are stored for years, not for only 3 months;

Database- Tables are optimized for fast, flexible data access;

5　　　Processing- Specialized functions for marketing analytics

The OLAP System has these major components: IW Data Warehouse (DW) for storage and de-normalized tables for accumulating Member transaction data (detail level data), archiving system for low-cost storage and rapid retrieval of old detail data.

10　　　IW Analytical Processing (AP) for marketing-statistical software procedures for reporting and segmenting.

Partner Report Repository for file storage and access method for historical reports.

Partner Marketing Databases (MDB) subsets of data warehouse designed for
15　　　marketer access at Partner level.

Graphical User Interface (GUI) to provide 'slice & dice' views of the MDB for the FT Account Manager and to provide OLAP system control for the InfoWorks System Administrator.

Processing Flow includes the steps of:

Validate Input, Running Totals, Upload Format, TP Unit, Procedures.

Data Warehouse

Data Collection from IW/TP

5   The TP will act as a central point of data collection for these reward system data sources:

Member transactions from the Partners	: Partner transmissions
Reward accounting by the TP	: IW TP Center
Debit Platform and IVR activity	: HCSC activity

10   High-level Control Center

Data Entry

Transferring Data from Data Warehouse to IW/TP

After download to the Data Warehouse, some analytical procedures will generate Member data values which may be of use in these TP functional

15   areas:

Member Reward Status input variable in logic for bonus rate calculation based on Member segment status i.e. Gold, Silver, Bronze

Members IVR custom messaging flow through to IVR

Mail-out messaging flow thru to statement fulfillment house

20   The Analytical Member data will be processed as a special transaction sent to the TP on a WEEKLY basis, taking place after that week's download has been analyzed.

The InfoWorks' Data Warehouse (IW/DW) stores reward system data to support the reporting, viewing and analytics functions. The DW has three sub-

25   components:

• Physical Storage Units   (ex: DASD drives)

• Database System   (ex: Sybase)

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- Database Server   (ex: Sun 1000)*

- Archive System   (tape or optical jukebox)

Referring to Figure 13 there is illustrated in a block diagram outbound activities for apparatus used by the method of Figure 3

5   Referring to Figure 14 there is illustrated, in a flow chart, statement processing data flow for the reward method of Fig. 3.

Debit Card Platform

The reward system PCS system comprises a front end voice application that has its own unique call flow as well as a back end database component
10   that will suit the data requirements of the reward system.

The Control Centre 102 is the interface to the debit platform 112. It has access to tables in the reward system PCS database and is able to perform reward system and batch updates. The reward system PCS system requires access to the HCC 102 tables in order to provide some of the features
15   required by the reward system.

The main functions and features required for the reward system PCS debit platform 112 are described in the following pages.

The reward system PCS has its own separate master database.

The tables that are the main concern are the CARD_NUMBER,
20   CONSUMER_CALL_LOG, and CONS_OUTBOUND_LOG tables.

It is also more efficient to keep the reward system call detail records separate because large call volumes are expected and reward system will be using the call detail records for queries by the Customer Service Centre and for its own analytics. Call detail records are currently stored in the PCS node
25   databases but will need to be written to the central master database so that

they are accessible to the reward system from one centralized location.

The reward system member will choose their preferred IVR language during enrollment. This choice will be validated against the choices available on the IVR and will be stored in a language field on the reward system PCS CARD_NUMBER table and in an IVR language field on their member profile. A member's household language is also recorded on their member profile so that analytics can be performed to determine the best options for future languages in the IVR.

At launch, English and French are the two languages that need to be available on the debit platform. More language options will be required as the campaign progresses and will be incorporated by simply recording all voice prompts in the new language and making a minor system change to the reward system front end voice application to recognize and act on the new language code.

When a member calls into the PCS system, they will be played a "welcome" message and a "request for member number" message in all IVR languages. Experienced members will know to immediately key in their member number rather than listen to the entire voice prompts. Once the member has entered their member number the call will proceed in their chosen IVR language. All voice within the call flow will be played in the member's language including branded messages and surveys.

In an alternative of the reward system PCS, a function will be available within the IVR to allow the caller to change their language choice (this will be particularly useful as new languages are added to the IVR). This "change language" function will be a sub-option under the administrative options on the main menu. If a member chooses to change their language in the IVR their current call must continue in the new language and the change must be immediately reflected on the reward system PCS CARD_NUMBER table. Also, a member transaction to the CC must be created to update their member

profile. Until this function is implemented, the member can change their IVR language through the Customer Service Centre.

Each reward system member number (card number in PCS) will have a password associated with it. This password will be chosen by the member when they first use the debit platform. It is personal to the member and will not be visible to anyone.

A flag may be added to the CAMPAIGN table to indicate whether a campaign uses passwords. As well, a field has been added to the CARD_NUMBER table to store the password for the card. The password length is currently set at 4 characters. A change will be made to increase the length of the password field to 10 characters and allow the IVR to accept a variable length password (minimum 4 to maximum 10 characters). A password reset flag will also be added to the CARD_NUMBER table so that the member can be prompted to choose a new password on their next call.

When the member is initially setup in the PCS system their password will be blank and the password reset flag will be set to Y to indicate that a password needs to be chosen. When the member first calls into the IVR they will be prompted to initialize their password. The member must enter a password which is then validated (4 to 10 characters). The member is then asked to re-enter their password for verification. If the two passwords are identical, the member's password is set otherwise they must begin the entire routine again. On subsequent calls, the member will be asked to enter their password immediately after entering their member number (the member number is validated first).

A function will be available within the IVR system to allow the caller to change their password. This will be a sub-option under the administrative options on the main menu. If a member forgets their password, a procedure will be in place that will allow a Customer Service Centre agent to reset it (this will be an audited process).

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During the call flow, the member will be presented with a main menu of IVR options. The entire menu will be soft prompted such that the caller can make their selection at anytime while the menu is played.

The primary categories on this main menu will be:

5   ➡ To listen to messages, participate in surveys, and earn reward system units, press 1

         ➡ To place a call, press 2

         ➡ For administrative options, press 3

         ➡ For program and/or partner information, press 4

10   ➡ To speak with a reward system customer service centre agent, press 0

Additional menu options can be added as required with the recommendation that the zero out to the CSC option always be played last.

A sub-menu will exist under the messages/surveys option and will be
15   presented to the caller when they press 1. The primary categories on this menu will be:

         ➡ To listen to messages from reward system Partners, press 1

         ➡ To participate in surveys or games, press 2

         ➡ To return to the main menu, press *

20   ➡ To speak with a reward system customer service centre agent, press 0

The place a call option will lead the caller through entering the telephone number for their outbound call.

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A sub-menu will exist under the administrative option and will be presented to the caller when they press 3. The primary categories on this menu will be:

⇒ To change your password, press 1

5   ⇒ To query your account balance, press 2

⇒ To transfer units to another member, press 3

⇒ To change your language choice, press 4

⇒ To return to the main menu, press *

⇒ To speak with a reward system customer service centre agent, press

10   0

A sub-menu may also exist for the program and/or partner information option but will be designed as needed. This may include topics such as "to hear a list of reward system Partners", "to learn more about the reward system program", etc.

15   The caller will be guided within the call flow to enter the digits for their outbound call if they have enough units in their account for a one minute call at the lowest rating level (eg. local call). The caller will be able to place a national or international call provided that they have at least enough units remaining in their account (after rating) for a one minute call.

20   Outbound calls to regions within the North American Dialing Plan will be rated based on their npa and nxx in conjunction with the npa and nxx of the caller. International calls will be rated on the country code that was entered.

With only 1 minute remaining in the call, the caller will be prompted

25   with a warning message which states that there is only 1 minute remaining for

the call. A second warning, with only 10 seconds left, will also play. After their time has been used, the caller will hear a "Your time is up" message and will be disconnected from their outbound call. The caller may also disconnect from their outbound call by pressing the # key. The caller's account will be immediately updated to reflect the time used. The duration of the call will be rounded up to the next minute and this time amount will be translated to units based on the rating scheme for the call. After placing a call (either successfully or unsuccessfully), the caller will hear their new balance and will be presented with the main menu.

An outbound call that consumes a member's units will also create a consumption transaction to the CC platform for audit purposes and to update the member's balance on their member profile.

The member will be able to obtain their current account balance within the IVR. A member's account balance is played to them before the main menu is presented.

If a member earns additional reward system units by participating in a survey, listening to a special branded message, or playing an interactive game then their updated balance may be spoken to them to assure them that they have received their reward.

After a member has entered the digits for their outbound call, the IVR will speak their account balance in terms of how many minutes they have available for the call they have just placed. This balance of time will be calculated based on the rate of unit consumption for that call and will be rounded down to the nearest minute. For example, if they have 6 units remaining in their account but are placing a call that has a 3 units : 1 minute rating ratio, then this rated balance will read "You have up to 2 minutes for this call". If a member's rated balance does not allow for at least a one minute call, they will not be played their balance but will instead be told that they do not have sufficient units to place the call.

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After a member has ended an outbound call, they will be played their new account balance and returned to the main menu.

Branded messages will be offered at two points within the IVR call flow. Type A messages are typically short messages (5 - 10s) and are slotted
5   to play after the member has entered their member number and password. Type B messages are typically longer messages (5 - 30s) and will be available under option 1 on the main menu ("To listen to messages, participate in surveys, and earn reward system units, press 1"). Type A messages can be recycled and played with Type B messages so that a member has the
10   opportunity to listen to them again.   After the member has entered their member number and password, the IVR system will check the CC MEMBER_MESSAGE table to determine whether the member has any Type A branded messages that should be played at this time (complete or expired messages are not considered). The next message to be played for a member is
15   based on which one has the highest priority and is the oidest within that priority level. A message code is returned from the MEMBER_MESSAGE table which must then be translated to a voice segment. The message code is looked up in the CC BRANDED_MESSAGE table to determine which voice segment to play, the type of play (hard or soft), and whether there is a reward
20   for fully listening to the message. The message is then played to the caller.

If the caller presses a DTMF key before the end of a soft play message (but after 2s of play) then a message transaction record is created with the message code, the member number, the length of time the member listened to the message, and a "partially listened" status. If the caller fully listens to the
25   message then a message transaction record is created with a "fully listened" status. If the message was fully listened to and a reward is offered, the member's account must be immediately updated to reflect the reward and a reward transaction must be created and sent to the CC for audit purposes. If the caller pressed zero before the branded message finished playing they will
30   be transferred to the CSC (any other key will not have an action associated

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with it). The member's account balance is played after the branded message. It must reflect any additional reward that was given for listening to the branded message. The member will hear a maximum of 1 branded message per call. If the branded message is flagged as recyclable, then the message's priority for that member is lowered so that it will be considered again but only after other messages have been considered. If it not recyclable, then the message for that member will be flagged as complete.

If the caller chooses option 1 on the main menu and then selects to listen to branded messages, they will be presented with all Type A and Type B branded messages. The branded messages will be ordered based on priority and age. If the message is soft play, the member will have the option to interrupt by pressing a DTMF key which will stop the message from playing. The caller will be instruct that the # key is to be used to interrupt/skip a message. With this interrupt, or when the message had finished playing, the caller will be presented with three options. They can listen to the message again, move on to the next message, or return to the menu. After a message has been listened to (either fully or partially) a message transaction record will be created. If there is a reward for "fully listened to" messages, then the member's account is updated with the reward and a reward transaction is initiated. If the message is flagged as recyclable then the priority of the message is lowered so that it moves further down in the queue otherwise, the message is flagged as complete and will not be offered to the member again.

Surveys and interactive games will be offered through option 1 on the main menu ("To listen to messages, participate in surveys, and earn extra reward system units, press 1").

If the caller selects option 1 from the main menu and then selects to participate in surveys and games, the IVR system will check the CC MEMBER_SURVEY table to determine whether the member has any surveys or interactive games to present at this

time. The member will be able to participate in all surveys or
games that have been assigned to their member number. The order
in which these surveys are to be presented for a member is based
on which survey has the highest priority and is the oldest within

5   that priority level. The survey codes are returned from the
MEMBER_SURVEY table and must then be translated to a state
table name for each survey. The survey code is looked up in the
CC SURVEY table to determine which state table to invoke and
whether there is a reward for completing the survey. By branching

10   to a state table, this survey and game feature is very flexible and
can involve anything that is possible within the IVR world.

The beginning steps of a survey or game will include a brief
explanation of what it is about. For example, "Partner X will
reward you with 5 reward system units to answer the following

15   survey". The introduction will also give the caller an option to
continue or skip. If the caller chooses to skip the survey or game
they simply move on to the next survey that was assigned to them.
If the caller continues and partially completes the survey or game
then a decision is made within the survey or game whether it

20   should be made available to the caller again (either to complete or
to redo). A decision will also be made within the survey about
creating a survey transaction record for partially completed
surveys. If the caller fully completes the survey then a survey
transaction record is created and the survey for that member is

25   either marked as completed or it is recycled by lowering the
priority. If the survey was fully completed and a reward is offered,
the member's account must be immediately updated to reflect the

reward and a reward transaction must be created and sent to CC for audit purposes. The actual results of a survey or game will be transmitted (if necessary) via the CC to the transaction processing kernel for analytics. This transmission of results will not be a standard transaction as the data produced by a survey or game will vary depending on the survey or game.

Wherever a menu selection is offered in the IVR system, an option on this menu will be to zero out to the customer service centre ("To speak with a reward system customer service centre agent, press 0"). Most of the voice prompts that are played to the caller are soft play and can therefore be interrupted at any time by a DTMF key. If a menu follows one of these prompts then a caller pressing zero during the prompt will transfer their call to the CSC. For example, the member is listening to their account balance and presses zero. This zero interrupts the playing of the account balance and is interpreted the same as the caller waiting for the main menu to play and then pressing zero. The member can also zero out to the CSC while listening to a soft play branded message.

There will also be a tunable option (turn it on or off) that will automatically zero out a caller to the customer service centre when they appear to be having difficulty using the IVR system. For example, the caller was given two tries to enter their member number but the IVR did not detect a response. The caller will be told they are being transferred a CSC agent and can choose to either stay on the line or hang up. The CSC agent can then assist

the caller in determining their difficulty (rotary phone, insufficient time, etc). The caller could also be transferred to the CSC if they appeared to be deliberately trying to defraud the system (eg. member number hunting or guessing passwords).

5   Alternatively, a transfer to the customer service centre could be accompanied by a screen pop based on member number information and perhaps based on where the caller was in the IVR when they pressed zero. The CSC agent will then be able to better assist the caller as they would already have an idea why the caller
10   was transferred to the CSC.

Once in the IVR system (member number and password have been entered), the caller should be able to transfer units from their account to any other valid member's account in the reward system PCS. This option will be available on the administrative options
15   sub-menu.

When the caller chooses the member to member transfer option, they will be asked to enter the number of units they wish to transfer. Once the system has validated that the caller did not enter an amount greater than their account balance, the caller will be
20   asked to enter the member number to which they wish to transfer the units. The system will then verify that the "transfer to" member number is valid. The caller will not be asked for the other member's password. The "transfer to" member number and the number of units to transfer will be repeated to the caller. The
25   caller will be given the option to continue (if the information is correct) or restart (if the information is not correct). A member to

member transfer will immediately update the two members account balances. A consumption transaction will be created for the "transfer from" member and sent to the CC for audit purposes and to decrement the member's balance in their member profile. A reward transaction will be created for the "transfer to" member and sent to the CC for audit purposes and to increment the member's balance in their member profile. Note: the alternative option being considered is to send a special member to member transfer transaction to the CC for audit purposes.

Another alternative is to support cellular debit calling. As a result of the mobile nature of the caller, issues such as location of the caller (roaming or out of home area) must be considered. The caller dials something like *99 to connect them to the reward system debit application through which they will enter their member number and password and place their call. The rating (unit consumption) for a cellular call may be different than for a land based call and may also involve a long distance debit. The member will only have one account of units from which either land based or cellular calls are debited.

The IVR system may be able to expand to include other options without significantly changing the current options - so as to avoid confusion for the caller that has become experienced at using the system. Other functions may include: faxing of account information (may consume units); information services (eg. sports, horoscopes) that may consume units per use; etc.

2.0 Customer Service Centre

The Control Centre will be the interface to the reward system Customer Service Centre. All information that is required for the CSC screens will be derived from the CC databases and the debit platform databases.

5   The Customer Service Centre will have a screen based application to gather and access reward system data. The CSC agent's screen is populated with member profile data as the call is being transferred (provided that the caller zeroed out from the application after entering their member number).

The following pages contain details on the main areas of functionality

10   for the CSC application.

Program Information

- Explain the loyalty program

Explain to members and non-members the reward system concept, who the partners are, how to enroll, how to gather and use units, the rating

15   schemes of the different partners, etc. This information may either be stored online or in a manual at each agent's workstation.

- Create fulfillment requests for members

Generate a fulfillment request in the reward system to initiate a mailout of information.

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- Explain branded messages and surveys

Give assistance about listening to branded messages, answering surveys, or playing interactive games that are currently setup in the system.

Member Profile

5   - Enroll new members into the program

Agents will be able to collect all pertinent enrollment information from the caller into their reward system CSC application. The application will guide them as to the required information and will allow a completed application to be submitted to the CC for processing. The enrollee will receive their reward

10   system card in the mail once the system has processed their application (they will not know their member number until they receive their card).

- Correct enrollments

A feature on the CSC application will be to bring forward any enrollments that did not pass the validation process (eg. incomplete data that

15   would prevent the enrollee from being properly serviced by reward system). The CSC agent will place outbound calls, fill in the missing details, and submit the enrollment for processing (the enrollment must contain a valid phone number).

- Query member profile

20   Query with member number to retrieve member profile information (eg. name, address). Queries using other fields will also be required (eg. by name). This function will be used to personalize the conversation between the

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CSC agent and the member as well as to inform the agent of special considerations (eg. hearing impaired, gold rated reward system member).

• Update member profile

A query will be initiated to retrieve the member profile information so the CSC agent can verify that the caller is the member. The CSC agent can then change any of the displayed information (eg. name, address, language). Note that a change to a member's spoken language will be reflected on the debit platform.

• Retire or reactivate members

Based on a request to do so by a member, the agent will be able to initiate a transaction to the CC to retire or reactivate a member.

• Maintain a contact log

All calls between CSC agents and members will generate a contact log record so that member's comments/complaints/suggestions can be collected and recorded as part of their profile information.

• Gather member details/statistics

The CSC agents may be able to gather remarks about a member that would be useful in future dealings with that member (eg. hearing impaired, preferred calling time frame for accepting calls, etc.). Also, the CSC agent may ask the member to answer survey questions either on the inbound call or by making outbound calls.

Member Card

• Initiate a password reset

Once the CSC agent has verified that the caller is the member, the
agent can initiate a password reset transaction to the CC. This transaction sets
the member's password reset flag on the debit platform which will then force
them to enter and verify a new password the next time they call into the IVR.
The ability to do this may be restricted to CSC supervisors as the member will
be required to give their personal validation number (eg. mother's maiden
name).

• Handle a lost card problem

A procedure needs to be developed to handle this - the details of the
procedure will drive the system requirements.

The options are a) to try to determine the member's number so that a
replacement card can be mailed to them or b) to re-enroll the member as if
they had just joined. With option A, a fulfillment request will be initiated to
the CC to send the replacement card. With option B, a new enrollment
transaction will be sent to the CC, the member will lose their units and reward
system will lose any previous data that had been collected on the member.

• Create a fulfillment request for additional cards with the same
member number.

• Unlock a member's card

A member's card is locked by the PCS system while it is in use. It

may remain locked if there was a significant system problem while the member was using their card. This unlock process will first verify that the card is not locked because it is currently in use, then it will send a request to the CC to unlock the card. The unlock will be immediately effective.

5 • Add units to a member's card

At the CSC agent's discretion, units may be added to a member's card to compensate for a problem. These units can be charged to different sources (such as a specific partner). This function will initiate a transaction to the CC to immediately update the member's balance and create a

10 MEMBER_REWARD_TXN as an audit.

Member Account Information

• Query account information

Query with member number to retrieve the member's card balance and a history of debits and credits to their account.

15 A member's unit accumulation history consists of reward transactions that show how the member acquired their units and from which source (purchases at partners, CSC agents, branded messages, surveys, other members). If the reward is a summary reward (eg. it is composed of several purchase transactions from a partner) then it will be highlighted and the CSC

20 agent may perform a drill down operation to further define how that summary reward was calculated.

A member's unit consumption history consists of consumption

transactions that show how the member used their units (outbound calls, transfers to another member). Outbound calls will show the number that was called, the duration of the call, and the number of units that was consumed by the call. Transfers will show the member number of the person that the units

5   were transferred to.

Note: This information should be at the same level of detail as the information displayed on member statements (3 months).

CC Transaction Processing

The CC Transaction Processing centre interfaces to the reward system PCS

10   system (debit platform), the reward system Customer Service Centre, the Transaction Processing centre, and the IVR Enrollment process. Transactions are received from and sent to these interfaces either in a batch or reward system mode. The CC TP centre houses transaction databases that are used for audit purposes and well as for queries from the CSC and the reward system

15   PCS.

There will be a suite of applications that will handle member enrollment. The system design to handle these will depend on the method of enrollment. For example, an electronic kiosk may require a direct link to the member profile database and may simulate real-time enrollment. An IVR

20   application can capture DTMF and voice input to create an enrollment record. If enrollments are collected from the customer service centre then screens will need to be designed so that the customer service centre agents may enter the member information directly into the system. If enrollments are gained through amalgamating with already existing loyalty programs then a download

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file from the new partner's loyalty program may be the best solution (however, fiie format and data transfer issues will need to be resolved).

Member transactions with a type "enrollment" will be sent from various sources in either batch or reward system to the High-level Control Centre for validation and processing.

• Collect enrollment data

Regardless of the method used to collect the enrollment data from the prospective members, the result will be a transaction to the CC (either batch or reward system). The format of this transaction (MEMBER_TXN) is outlined in the reward system Database Design document.

• Validate enrollment records

As enrollment transactions are received, they are validated and recorded in the MEMBER_TXN table as either *new* (passed validation) or *corrections pending* (did not pass validation). CSC agents will be able to modify transactions that are flagged as *corrections pending* and resubmit them for processing. Any enrollments that originate from the CSC, new or corrected, will have been validated online so that they do not recycle continuously through the system causing frustration to both the CSC agent and the enrollee.

• Assign member numbers

A process will periodically search the MEMBER_TXN table for validated enrollments. A member number will be chosen from the pool of unique member numbers and will be assigned to the enrollment to complete a new member profile. The member number will be flagged as *in use* in the

MEMBER_NUMBERS table and the new member profile record will be added to the MEMBER_PROFILE table.

• Activate the new member

After the MEMBER_PROFILE record has been created for the new member, the member will be activated on the debit platform by adding their member number to the reward system PCS CARD_NUMBER table.

• Forward member profile to the online analytical processing system

A batch process will be run at least daily to send the new member profiles, with member number, to the transaction processing kernel. The transaction processing kernel will add them to their member profile table and issue a welcome kit to the new member. The welcome kit will contain the member's reward system card with their member number printed on the card.

Member Number Maintenance

• Generate new member numbers

As the pool of available member numbers declines, new member numbers will be generated and added to the pool (MEMBER_NUMBERS table). The generation process will take into consideration all currently existing member numbers and will not create duplicates.

• Manage the member numbers

When member numbers are assigned to new enrollments they are

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flagged as *in use*. They remain in this state until the member retires (or is suspended). When a member retires, the member number is removed from the debit platform (member deactivated) and it is also flagged as retired in the MEMBER_NUMBERS table. If the member does not reactivate within a

5   specified period of time then the member number is made available for reuse. Reward system will have to determine a policy with regard to whether a member loses their accumulated units by retiring.

* Database synchronization

A process will be run periodically to verify that the debit platform

10   CARD_NUMBER table remains in sync with the CC MEMBER_PROFILE table. All member numbers on the debit platform must relate to non-retired and non-suspended member numbers in the member profile table and must have the same account balance.

The CC MEMBER_PROFILE table must contain member numbers that

15   match member numbers in the MEMBER_NUMBERS table. The status of the member numbers must also be similar, that is an *in use* number in one table cannot relate to a retired number in the other. Numbers that are not *in use* or *retired* in the MEMBER_NUMBERS table must not exist in the MEMBER_PROFILE table.

20   The CC member profile table must also be verified with the online analytical processing system member number table to ensure that these two are identical.

Member Profile Information

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Note: The full member profile database to be used for analytics will be designed, developed and managed by transaction processing kernel but a subset of this database will need to reside in the CC so that member profile information is available to the customer service centre agents. The information

5   collected in the CC will pertain to information that is required during the enrollment process; information that can be changed by the member calling the CSC; and information that can be changed via an IVR function (eg. language). All data contained in the CC tables of the member profile database will be created, updated, and deleted by the CC. That is, the CC has the

10   master version of these tables. A copy of new, updated, or deleted records will be sent to the transaction processing kernel so that the corresponding tables in their member profile database can be maintained.

• Process member profile updates

Member profile updates will be received in reward system or batch

15   from the customer service centre (eg. name, address) or the IVR (eg. language) or transaction processing kernel (eg. from white mail processing). The CC will record these transactions in the MEMBER_TXN table, validate the changes and update its member profile table. It will forward these changes to the transaction processing kernel to update their member profile table and

20   will also update the debit platform if required.

• Process member profile retirements or suspensions

The customer service centre can initiate retirements or suspensions at a member's request or the CC can determine that a member should be retired or suspended based on account inactivity or fraudulent use of the system. The

25   CC will record these transactions in the MEMBER_TXN table. It will forward these updates to the transaction processing kernel to update their member

- 50 -

profile table. The CC will also apply these changes as deletes to the CARD_NUMBER table in the debit platform database.

• Forward miscellaneous fulfillment requests to the transaction processing kernel

5   Fulfillment requests will be created for welcome kits, replacement cards, program or partner information, and account statements. These requests will come primarily from the CSC.

• Forward any member number based data collection to the online analytical processing system for analysis

10   This type of information will be from survey responses or member comments that were collected in the IVR or by the CSC. A member's demographic information (eg. number of cars) may also be collected via the IVR or CSC. These two types of information will not be stored in the CC member profile table but will be transmitted to the transaction processing

15   kernel to be stored in their data warehouse. The type of information collected may vary so a flexible process needs to be developed to handle this data transfer.

Member Reward Transactions

• Receive member reward transactions from the online analytical
20   processing system

Initially there will be a batch process for transmission of this data. These rewards are derived from member purchases from partner point of sale

systems. The reward, with purchase information, is captured in the MEMBER_REWARD_TXN table for audit purposes and for the CSC interface so that an agent can explain to a member how they earned their units. After the transactions are added to the table, they are summarized by member number and the member's balance is updated with the reward on the debit platform CARD_NUMBER table and on the CC member profile table.

• Receive member reward transactions from the Customer Service Centre

These rewards are generated when a CSC agent gives a member units because of a problem they experienced. They are sometimes associated to a particular partner if the member's concern relates specifically to a partner. The reward is captured in the MEMBER_REWARD_TXN table with the CSC agent's id for audit purposes and for queries by the CSC. Immediate reward system update to the member's balance on the debit platform CARD_NUMBER table is required. The member's balance on the CC member profile table is also updated.

• Receive member reward transactions from the debit platform

Reward transactions will be received from the debit platform for member to member transfers of units, branded messages, and survey completion. These rewards have already been added to the member's balance in the CARD_NUMBER table but need to be added to the member's balance on the member profile table. They also need to be captured in the MEMBER_REWARD_TXN table for audit purposes and for queries by the CSC.

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• Transaction audit trail

The CC system should be able to track all transactions and if necessary re-process any transactions that were not processed successfully. The system should also be able to reverse any transactions that were sent in error (backing 5   out a reward from a member's balance if necessary).

• Report any errors/anomalies

As reward transactions are processed, they will be validated and analyzed for errors such as unknown member number or "large" reward, etc. A facility will be provided to review and correct any errors/anomalies and 10   resubmit the reward transaction for processing.

• Send member reward transactions to the online analytical processing system

Online analytical processing system will need a copy of reward transactions for rewards that were not generated by purchases (eg. units 15   awarded by the customer service centre or from a survey) so that the information is available for statementing, billing, and analytics. This information will be sent in a batch process.

Member Consumption Transactions

• Receive member consumption transactions from the debit platform

20   Member consumption transactions will be generated by the debit platform for outbound calls that consume a member's units. The member's balance on the debit platform CARD_NUMBER table has already been

updated but the member's balance on the CC member profile table needs to be updated. The consumption information is captured in the MEMBER_CONSUMPTION_TXN table for audit purposes and for the CSC interface so that an agent can explain to a member how they used their units.

5   • Receive member consumption transactions for transfers

A member to member transfer will generate a reward for one member and a consumption for the other. If this transaction originates from the debit platform then both members' balances on the debit platform have already been updated but the members' balances on the CC member profile table need to be

10   updated. If this transaction originates from the CSC then the members' balances need to be updated on the debit platform CARD_NUMBER table and on the CC member profile table. This transaction will be captured in the MEMBER_CONSUMPTION_TXN table for audit purposes and for queries by the CSC.

15   • Send member consumption transactions to the online analytical processing system

A batch process will extract and send the member consumption transactions to the transaction processing kernel so that the information is available for statementing and analytics.

20   • Transaction audit trail

The CC system should be able to track all transactions and if necessary re-process any transactions that were not processed successfully. The system should also be able to reverse any transactions that were sent in error (backing out a consumption from a member's balance if necessary).

• Report any errors/anomalies

As consumption transactions are processed, they will be validated and analyzed for errors such as unknown member number or "large" consumption, etc. A facility will be provided to review and correct any
5   errors/anomalies and resubmit the consumption transaction for processing.

Branded Messages

• Forward a list of valid branded message codes to the online analytical processing system

Once a branded message has been recorded and setup on all the IVR
10   nodes and a code has been assigned to uniquely identify the message, it will be sent to transaction processing kernal so that members can be assigned to listen to the message. The information about a branded message is stored in the CC BRANDED_MESSAGE table.

• Accept from online analytical processing system member message
15   assignments

A batch file containing a list of targeted member numbers with a corresponding branded message code and priority will be sent from the transaction processing kernal to the CC. As the CC processes this file, it will add the member number and branded message code combination to the
20   MEMBER_MESSAGE table. There is a need to queue many messages for a member but to only play one per call. The member message table is essentially the member's queue of messages from which the debit platform chooses the next message to be played to the member during their call into the IVR.

• Funnel member message information back to online analytical processing system

When a branded message has been listened to by a member, either partially or fully, a record is created in the message transaction table (MESSAGE_TXN). This table records the date and time that the message was listened to and how much of the message was listened to by the member (number of seconds). A batch process will extract and send member message information to transaction processing kernel for "listened to" messages.

• Record and apply rewards (if applicable) for fully listened to messages

• Automatically expire branded messages after a preset date

• Cancel branded messages at any time

Member messages can be cancelled either specifically by member number or globally like the expiry.

Surveys (or Interactive Games)

• Forward a list of valid survey codes to online analytical processing system

Once the survey or interactive game has been developed and setup on all the IVR nodes and a code has been assigned to uniquely identify it, it will be sent to transaction processing kernel so that members can be assigned to

the survey. The information about a survey is stored in the CC SURVEY table. The call flow position field in this table will determine where in the call flow the survey can be offered.

• Accept from online analytical processing system survey assignments

A batch file containing a list of targeted member numbers with a corresponding survey code and priority will be sent from transaction processing kernel to the CC. As the CC processes this file, it will add the member number and survey code combination to the MEMBER_SURVEY table. There is a need to queue many surveys for a member but to only play one per call. The member survey table is essentially the member's queue of surveys from which the debit platform chooses the next survey to be played to the member during their call into the IVR.

• Funnel member survey information back to online analytical processing system

When a survey has been fully completed by a member a record is created in the survey transaction table (SURVEY_TXN). This table records the date and time that the survey was completed. A batch process will extract and send member survey transaction data to the transaction processing kernel for completed surveys. The survey responses will be sent to the transaction processing kernel through a separate process as this information will vary depending on the design of the survey.

• Record and apply rewards (if applicable) for successfully completed surveys

• Automatically expire surveys after a preset date

• Cancel surveys at any time

Member surveys can be cancelled either specifically by member number or globally like the expiry.

5   **Fraud Detection**

• Provide system alarms and procedures to detect and deal with fraudulent card use.

Telecommunications Reporting

• Manage the reward system call detail records on the debit platform

10   If this information is required for analytics, then extract it and send it to the transaction processing kernel. A history will be maintained for billing purposes as well as for telecommunications analytics. The CC will control the archiving of the cdr information from the reward system CONSUMER_CALL_LOG and CONS_OUTBOUND_LOG tables on the debit

15   platform.

• Provide information and reports that can be used to optimize telecommunications

Reports will be available to analyze the system usage and capacity requirements with regards to call volumes and peak periods. These reports

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will be used to optimize all aspects of the telecommunications from 800 number translations through to the Summa and DirectTalk. Telecommunications reporting will also analyze the batch and reward system transaction processing of the CC.

5   Numerous modifications, variations, and adaptations may be made to the particular embodiments of the invention described above without departing from the scope of the invention, which is defined in the claims.

CLAIMS:

1.   A method of providing telecommunications rewards to a member comprising the steps of:

generating a point-of-sale transaction;

5   relating the point-of-sale transaction to a member of telecommunications awards;

determining value of reward in dependence upon the point-of-sale transaction;

updating a member's profile for the member by the value determined.

10   2.   A method as claimed in claim 1 wherein the step of generating a point-of-sale transaction includes the steps of scanning a UPC code card of the member, and looking up the UPC code in a UPC database.

3.   A method as claimed in claim 1 wherein the step of determining value of the point-of-sale transaction to a member includes the step of

15   referring to the member's profile and a rewards file.

4.   A system for providing telecommunications rewards to a member comprising:

a data collection system;

a customer service centre;

20   enrollment processes;

a transaction processing system for managing data from the point-of-sale collection system and members and for calculation of rewards;

a control center for processing system transactions for the customer service center, system access, debit platform management and enrolling processes.

●   ●

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Fig. 1

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Fig. 2

```
                          ┌─────────────────────┐
                          │         1.          │
                          │   Point of Sale     │
                          │ transactions collected│──┐
                          └─────────────────────┘  30
  ┌──────────────┐              │
  │              │              ▼
  │ Transactions │        ┌─────────────────────┐
  │    File      │        │         2.          │
  │              │        │   Transactions      │
  └──────────────┘        │ aggregated and sorted│──┐
         34               └─────────────────────┘  32
```

1.
Point of Sale transactions collected — 30

Transactions File

34

2.
Transactions aggregated and sorted — 32

3.
Transactions rated to determine number of seconds to be rewarded — 36

38

Reward rating tables

44

Rewards File

4.
Special treatment of members determined, rewards calculated — 40

42

Member Profile

5.
Members profile examined and rewards updated on member file — 46

48

Member Profile

52

6.
Master update process performed on Debit Platform — 50

Debit System member profile

7.
Member phones into system and consumes rewarded seconds — 54

Fig. 3

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Fig. 4

Rewards Program — 100

Control Centre (HCC) — 102

Marketing Database (IW) — 104

Customer Service Cenre (CSC) — 110

Debit Platform and Interactive Voice Response systems (IVR) — 112

Data Warehouse (IW/DW) — 108

Transaction Processing (IW/TP) — 106

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Fig. 5

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Fig. 6

On-Line GUIs

Account Mngrs
IVR message codes
Partners
Locations
Bonus programs
Exchange Rates

Edit Tables

Sys Adm
Error Message Codes
System control tables
Security
Statement Control

Member Purchases
Rewards
Source: HCC, Partner

Member Enrollment
New members
Profile updates
Deactivation/activation
Segmentation
Source: HCC

IVR Message Flag
Activate/Deactivate
Source: HCC, AP

Mail-Out Message Flags
Activate/Deactivate
Source: HCC, AP

Transaction Processing

IVR Responses
Survey Responses;
Messages Listen To
Source: IVR

Member Rewards Credits
Source: HCC

CSC Messages
Problem
Resolutions
Source: HCC

Debit Platform Rewards Debits
Source: HCC

Member Leads
Source: Partners, Data Entry

Database Synchronization Transactions
Source: HCC

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Fig. 7

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Partner or HCC

Fig. 8

File Reception

High Level Validation

Disaster Recovery Copy of input files

File Segmentation

Segment Validation and Pre-Process

Segment Process and Commit

Extract Outbound Transactions

Transmit File

Transaction Acknowledgment

Disaster Recovery Copy of output files

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Fig. 9

Fig. 10

```
        ┌─────┐
        │ CSC │
        └─────┘
           │
           ▼
   ┌──────────────────┐
   │  File Reception  │
   └──────────────────┘
           │
           ▼
   ┌──────────────────┐
   │ File Segmentation│
   └──────────────────┘
           │
           ▼
   ┌──────────────────┐
   │  File Validation │
   └──────────────────┘
```

New Member - HCC assigns a unique Member No.	Valid - Update Member Profile	Invalid or missing data - Follow-up required	Duplicate Member - reject record

```
   ┌──────────────────┐                ┌──────────────────┐
   │    Extracts:     │                │     Transmit     │
   │  Welcome Kits    │                │ Acknowledgements │
   └──────────────────┘                └──────────────────┘
           │                                   │
           ▼                                   ▼
   ┌──────────────────┐                   Back To CSC
   │   Transmit To    │
   │   Fulfillment    │
   └──────────────────┘
```

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Fig. 11

Partner → Member Purchase Transaction → IW/TP → Member Reward Credit Transaction → HCC

Fig. 13

TP and Data Warehouse

- Member Leads
- Member Reward Credits
  - new rewards allocated
- IVR Message Control Flags
  - activate
  - deactivate
- Welcome Kit Extracts
  - variable imaging
- Standard Statement Extracts
  - demographic
  - datarange
  - partner
  - mail-out flags
- Log Reports
  - errors
  - exceptions
  - audit
  - files
  - processed
  - performance
- Data Warehouse Extracts
  - long term purchasing
  - segment-ation
- Basic Partner Analytical Reporting
  - frequency
- Management Reporting
  - account mgmt
  - statistics re partners members consumption
- Partner Billing Extracts
  - frequency
  - partner profile
  - offers

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TP Unit Procedures

IW/TP

⇨ Validate Input
⇨ Running Totals
⇨ Upload Format
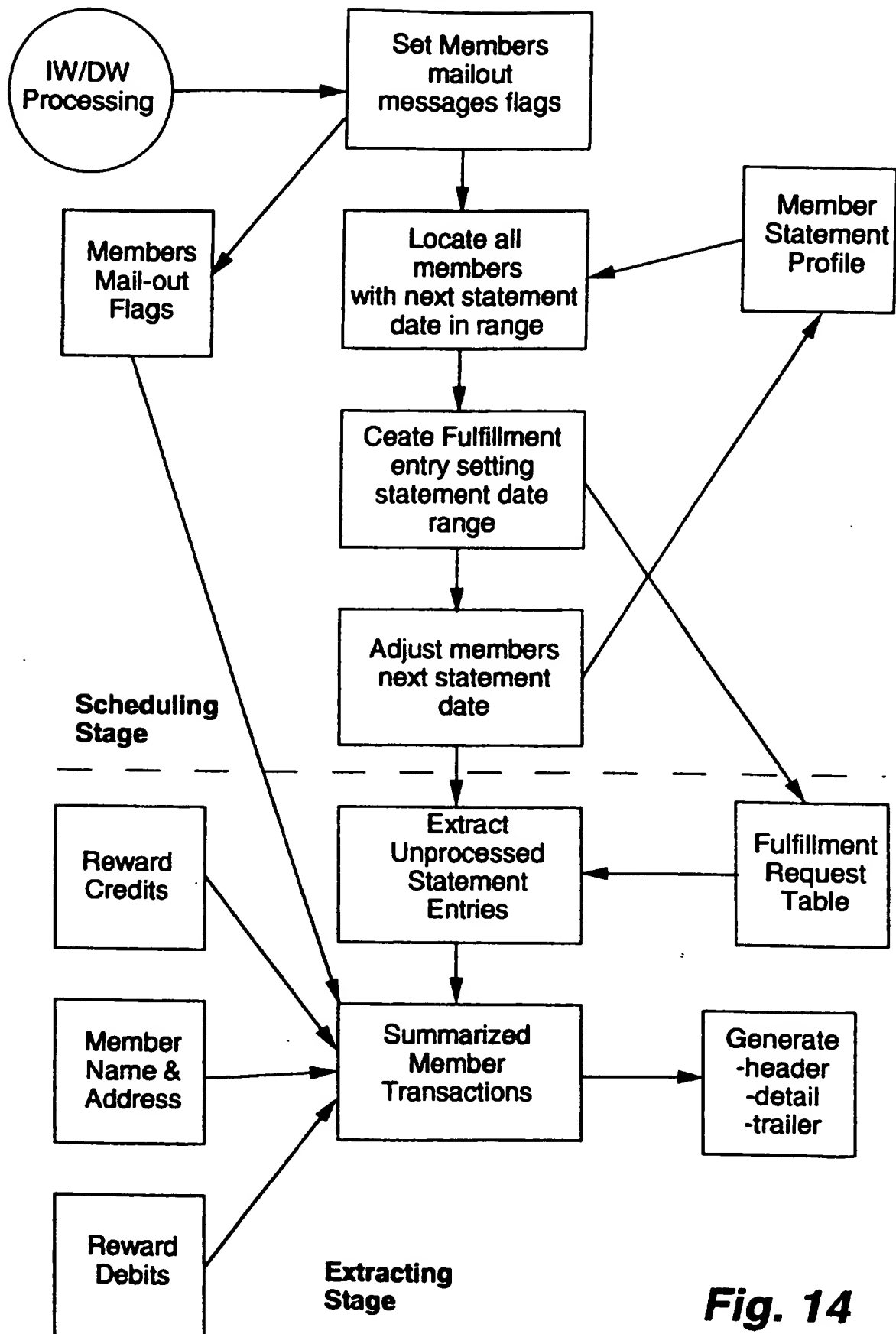
Data Warehouse Procedures

Load Data Warehouse

⇨ Validate Data
⇨ Summarize
⇨ Calculate
⇨ Geocode

Analytical Procedures

⇨ Segmentation
⇨ Projection
⇨ Statistics
⇨ Transitions

TP Update Transaction

Report Generation

Fig. 12

IW/DW Processing

Set Members mailout messages flags

Members Mail-out Flags

Member Statement Profile

Locate all members with next statement date in range

Ceate Fulfillment entry setting statement date range

Adjust members next statement date

Scheduling Stage

Reward Credits

Extract Unprocessed Statement Entries

Fulfillment Request Table

Member Name & Address

Summarized Member Transactions

Generate
-header
-detail
-trailer

Reward Debits

Extracting Stage

Fig. 14

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